08(3405)

P. R. F. I. LIBRARY

JAN 26 1959

FISH & WILDLIFE SERVICE

PROCEEDINGS OF THE UNITED STATES NATIONAL MUSEUM

issued by the

SMITHSONIAN INSTITUTION
U. S. NATIONAL MUSEUM

Vol. 108 Washington : 1958 No. 3405

THREE NEW SERRANID FISHES, GENUS PIKEA, FROM THE WESTERN ATLANTIC

By Leonard P. Schultz

Several years ago, when studying the serranid fishes related to *Pikea* Steindachner, *Chorististium* Gill, and *Liopropoma* Gill during my preparation of the report on the Marshall Island fishes (U. S. Nat. Mus. Bull. 202, vol. 1, 1953), I observed that USNM 117191 represented an undescribed new species. However, the six specimens in that lot were in poor condition, so I waited until additional specimens became available for further study. This new material contained still another undescribed species with two new subspecies, all of which are described here.

Mrs. Patricia Isham made the drawings for figures 1 and 2.

Genus *Pikea* Steindachner

Pikea Steindachner, Sitzber. Akad. Wiss. Wien, vol. 69, p. 2, 1874 (type species, *Pikea lunulata*=*Grystes lunulatus* Guichenot).

Dr. James Böhlke (Notulae Naturae, Philadelphia, No. 291, pp. 1–7, pl. 1, 1956) pointed out that I overlooked one of the almost embedded dorsal spines in my description of *Ypsigramma lineata* (U. S. Nat. Mus. Bull. 202, vol. 1, p. 375, fig. 59, 1953) and that *Chorististium*

rubrum (Poey) is scaled over between dorsal fins similar to *Y. lineata*. He concluded that my genus *Ypsigramma* is a synonym of *Chorististium*, with which opinion I fully agree.

Therefore the generic name *Chorististium* must be used for that group of species in which the spiny and soft dorsal fins are separated by several rows of scales. The group of species with continuous dorsal fin and eight dorsal spines then takes the next available generic name, which I find to be *Pikea* Steindachner.

Radiographs made of nearly all the specimens available to me in this relationship show clearly that the vertebrae always are 10+14=24 and that in the genus *Chorististium* there are always eight dorsal spines—the seventh is embedded (occasionally the tip projects slightly) and is separated from the sixth and eighth spines, which project.

The three new forms have the following characters in common. Dorsal fin single, distance from tip of snout to dorsal origin, 2½ times in standard length; posterior edges of scales with ctenii, head scaled forward to front nostrils; basal part of soft dorsal, pectoral, and caudal fin scaled; basal three-fourths of anal fin covered with scales; opercle with two flattish, bluntly rounded spines; preopercle finely serrate; anterior nostril tubular, posterior nasal opening, a pore at front of eye; gill rakers slender with dentigerous rudiments anteriorly; villiform teeth on jaws, vomer and palatines; caudal fin emarginate; pectoral fin elongate, reaching to opposite anal fin origin; first dorsal spine shortest, about one-third length of third dorsal spine; lateral line arched along back below base of dorsal fin then curving downward to midline of caudal peduncle; premaxillary protractile; gill membranes free from isthmus but attached to it far forward; pelvic rays always I,5; branched caudal rays 8+7; vertebrae always 10+14=24; seven branchiostegals; pores in lateral line to base of caudal fin 45 to 49 (rarely 49).

Pikea cubensis, new species

FIGURE 1

HOLOTYPE: USNM 158138, collected by the *Oregon*, northeast of Caibarien, Cuba, lat. 22°50′ N., and long. 79°08′ W., 200 to 225 fathoms, July 16, 1955, standard length 80.3 mm.

PARATYPES: USNM 175254, collected with holotype and bearing same data; 3 specimens, 113, 83, and 58 mm. USNM 185083, Bahama Islands, lat. 25°15′ N., long. 79°13′ W., 200 fathoms, July 23, 1957, *Combat* station 445, 2 specimens, 69 and 79 mm.

DESCRIPTION: Counts made on the types are recorded in table 1.

Precision measurements were made on the holotype and paratypes. These data are recorded in thousandths of the standard length, respec-

tively, 80.3, 113, 83, and 58 mm. Greatest depth of body 293, 327, 283, and 285; length of head 380, 354, 368, and 371; snout 80, 103, 88, and 86; fleshy interorbital space 62, 62, 60, and 60; diameter of eye 108, 88, 96, and 117; postorbital length of head 194, 173, 193, and 190; least width of preorbital 19, 20, 18, and 22; length of maxillaries 166, 173, 181, and 178; least depth of caudal peduncle 139, 149, 139, and 138; distance from base of last anal ray to midbase of caudal fin 217, 251, 245, and 219; length of longest (third) dorsal spine —, —, 133, and 143; of longest soft dorsal ray (third from last) 212, 208, —, and 172; longest anal spine (third) 106, 90, 108, and 98; longest soft anal ray (third from last) 162, 159, 175, and 150; longest pectoral ray 280,

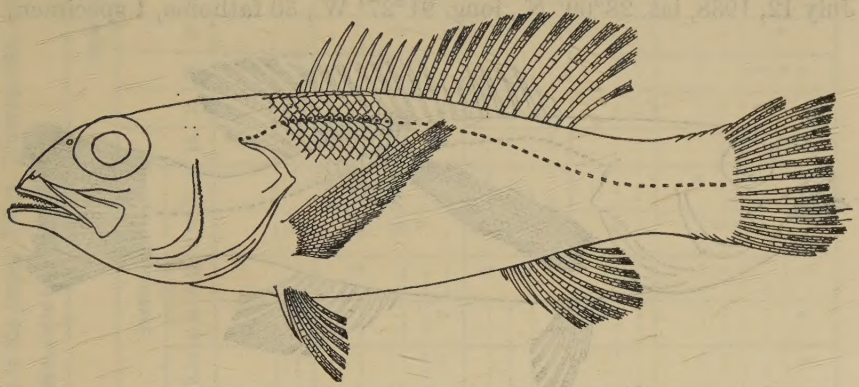

FIGURE 1.—*Pikea cubensis*, new species, from Cuba.

268, 286, and 281; longest pelvic ray 164, 142, 163, and 173; longest caudal fin ray —, 274, —, and —.

COLOR IN ALCOHOL: Plain straw-colored except tips of outer caudal fin rays are blackish.

REMARKS: This new species is distinguished as indicated in the key on page 327. It differs from *P. mexicanus* in the number of soft dorsal fin rays.

***Pikea mexicanus mexicanus*, new species and subspecies**

FIGURE 2

Liopropoma aberrans (non Poey) Longley and Hildebrand, Carnegie Inst. Washington Publ. No. 535, Papers Tortugas Lab., vol. 34, p. 101, 1941 (USNM 117191 from Tortugas).

HOLOTYPE: USNM 158246, collected Nov. 25, 1950, by the *Oregon* in Gulf of Mexico, southeast of Corpus Christi, Tex., lat. 27°22′ N; long. 96°08′ W., 103 fathoms, standard length 101 mm.

PARATYPES: USNM 117191, collected by Dr. W. H. Longley at Tortugas, Fla., 6 specimens, 46 to 95 mm. USNM 155240, collected July 12, 1952, by the *Oregon* in Gulf of Mexico, southwest of Cape

San Blas, Fla., lat. 29°31′ N., long. 86°26′ W., 100 fathoms, standard length of 2 specimens 91 and 113 mm. USNM 155508, collected by the *Pelican* Feb. 4, 1939, in the Gulf of Mexico, southeast of Corpus Christi, Tex., lat. 29°02′ N., long. 96°40′ W., 48 fathoms, standard length 130 mm. USNM 156706, Gulf of Mexico, south of Panama City, Fla., *Pelican* station 154–2, Mar. 10, 1939, lat. 29°08.5′ N., long. 85°47′ W., 70 fathoms, 1 specimen, standard length 77 mm. USNM 156707, Gulf of Mexico, southeast of Pensacola, Fla., *Pelican* station 143–4, Mar. 5, 1939, lat. 29°44.5′ N., long. 86°34.5′ W., 98 fathoms, 1 specimen, standard length 83 mm. USNM 156708, Gulf of Mexico, southwest of New Orleans, La., *Pelican* station 85–3, July 12, 1938, lat. 28°09′ N., long. 91°27′ W., 50 fathoms, 1 specimen,

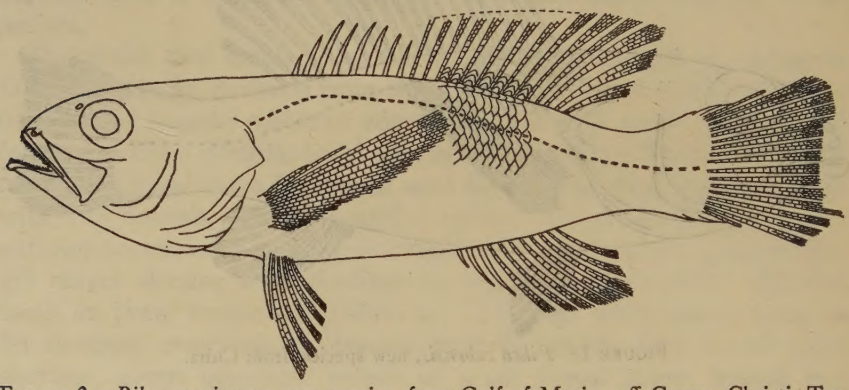

FIGURE 2.—*Pikea mexicanus*, new species, from Gulf of Mexico off Corpus Christi, Tex.

standard length 79 mm. USNM 156709, Gulf of Mexico, southeast of Corpus Christi, Tex., *Pelican* station 114–4, Feb. 4, 1939, lat. 26°56.5′ N., long. 96°27′ W., 90 fathoms, 1 specimen, standard length 86 mm.

The following paratypes are in the Tulane University collections, New Orleans. All are from the Gulf of Mexico and were collected by the *Oregon:* TU 12985, lat. 29°19′ N., long. 86°04′ W., 82 fathoms, Oct. 31, 1953, 1 specimen, 71 mm. TU 11008, lat. 27°10′ N., long. 96°20′ W., 150 fathoms, June 5, 1954, 1 specimen, 112 mm. TU 14739, lat. 27°40′ N., long. 95°45′ W., 100 fathoms, May 7, 1956, 1 specimen, 106 mm. TU 12972, lat. 28°47′ N., long. 85°19′ W., 64 fathoms, Mar. 7, 1953, 11 specimens, 54 to 76 mm. TU 11004, lat. 27°10′ N., long. 96°20′ W., 150 fathoms, June 5, 1954, 6 specimens, 87 to 104 mm.

DESCRIPTION: Counts made on the types are recorded in table 1.

Precision measurements were made on the holotype and three paratypes. These data are recorded in thousandths of the standard length, 101, 130, 113, and 91 mm., respectively. Greatest depth of body 258, 254, 283, and 291; length of head 371, 354, 363, and 357;

TABLE 1.—*Counts recorded for species referable to the genera* Pikea, Liopropoma, *and* Chorististium

(Letter "x" denotes data recorded from the literature)

Genera and species	Number of fin rays																	Total number of gill rakers on first arch												
	Dorsal							Anal				Pectoral																		
	VI–I–I	VIII	IX	12	13	14	15	III	8	9	10	i,13	ii,10	ii,11	ii,12	ii,13	ii,14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Pikea																														
japonicus		1				1		1			1													1						
aurora		4			4			4		4						8								4						
mexicanus mexicanus		34				33	1	33	33						3	38	1							10	15	3					
mexicanus atlanticus		24				24		20	20							21					1	10	11	1						
cubensis		4			4			4	4							8							1	3						
mowbrayi		1		1				1	1					2				1												
swalesi		2		1				2	2						4															2
lunulata		2		2				2	2						3	1					1	1								
maculata		x		x				x	x						x															
longilepis		1			1			1	1			2											1							
Liopropoma																														
aberrans			x	x				x	x																					
roseus			x			x		x	x																					
Chorististium																														
pallidum	1			1				1	1								2					1								
brocki	2			2				2	2						1	2							1							
lineata	5			5				5	5							7						2	2							
susumi	1			1				1	1							2			1	1										
africanum	x			x				x	x							1				x	x									
rubrum	4			4				4	4				3	2	1					1			1							

snout 89, 88, 84, and 77; fleshy interorbital space 59, 69, 62, and 60; diameter of eye 79, 77, 84, and 86; postorbital length of head 208, 200, 199, and 192; least width of preorbital 25, 32, 26, and 25; length of maxillaries 164, 167, 166, and 176; least depth of caudal peduncle 127, 135, 133 and 137; distance from base of last anal ray to midbase of caudal fin 228, 231, 235, and 242; length of longest (third or fourth) dorsal spine 119; 123, ——, and 116; of longest soft dorsal (third from last) ray 228, 211, 208, and 239; longest anal (third) spine 114, 107, 89, and 102; longest soft anal (third from last) ray 189, 177, ——, and 179; longest pectoral ray 297, 304, 310, and 297; longest pelvic ray 173, 181, 186, and 176; longest caudal fin ray 238, ——, 257, and 231.

Color in alcohol: Plain straw-colored, with traces of black pigment at tips of outer caudal fin rays.

Remarks: This new species is distinguished from *P. cubensis* by having 14 soft dorsal rays instead of 13. It may be distinguished from the other related species by means of the key.

***Pikea mexicanus atlanticus*, new subspecies**

Holotype: USNM 185005, collected Nov. 8, 1957, off French Guiana, lat. 7°18′ N., long. 53°32′ W., *Oregon* station 2021, 100 fathoms, standard length 108 mm.

Paratypes: USNM 185008, taken with holotype and bearing same data, standard length 98 mm. USNM 185007, off Surinam, lat. 7°32′ N., long. 54°12′ W., 100 fathoms, Nov. 8, 1957, *Oregon* station 2014, 5 specimens, 84 to 109 mm. USNM 185006, off Venezuela, lat. 9°53′ N., long. 59°53′ W., 125 fathoms, Nov. 3, 1957, *Oregon* station 1983, 9 specimens, 59 to 107 mm. . USNM 185082, off Surinam, lat. 7°30′ N., long. 54°16′ W., 125 fathoms, Nov. 8, 1957, *Oregon* station 2013, 1 specimen, 56 mm. USNM 185080, off Venezuela, lat. 9°24′ N., long. 59°41′ W., 110 fathoms, Nov. 4, 1957, *Oregon* station 1988, 1 specimen, 77 mm. USNM 185081, off Venezuela, lat. 9°39′ N., long. 59°47′ W., 100 fathoms, Nov. 4, 1957, *Oregon* station 1986, 9 specimens, 59 to 92 mm.

This new subspecies from off the Guianas and Venezuela is essentially the same (in all important characters) as *Pikea mexicanus mexicanus* of the Gulf of Mexico, except for the number of gill rakers on the first gill arch—18 to 21 on *P. m. atlanticus* and 21 to 23 on *P. m. mexicanus*. Because of the slight overlap in counts of gill rakers, I prefer to consider the form from off the coasts of Venezuela and the Guianas as a subspecies.

Key to genera and species related to *Pikea*

1a. Spiny dorsal fin continuous with soft dorsal by a ridge of scales along sides of connecting dorsal spines; no scaled area separating spiny and soft dorsal rays; 2½ to 5½ scales in a row from lateral line to base of last dorsal spine; 16 to 21 predorsal scales to occiput.

2a. Dorsal spines VIII (genus *Pikea*) [1]

3a. Anal rays III,10; dorsal rays VIII,14; pectoral ii,14; pores in lateral line 47; zig-zag scales around caudal preduncle 40 to 42; outer edge, distally, of each caudal lobe white (Japan) . . . . . **P. japonicus** (Döderlein) [2]

3b. Anal rays III,9; dorsal rays VIII,13; pectoral ii,13; pores in lateral line 48 to 51, zig-zag scales around caudal peduncle about 45 (Hawaiian Islands) . . . . . **P. aurora** Jordan and Evermann [3]

3c. Anal rays III,8.

4a. Pores in lateral line 43 to 49, rarely 49.

5a. Dorsal rays VIII,12.

6a. Pores in lateral line 43; pectoral rays ii,11; gill rakers on first gill arch about 15; tips of outer caudal fin rays black (Bermuda). **P. mowbrayi** (Woods and Kanazawa) [4]

6b. Pores in lateral line 46 or 47; pectoral rays ii,12; predorsal scales to occiput 19 to 21; gill rakers on first gill arch about 28 (Philippines) . . . . . **P. swalesi** (Fowler and Bean) [5]

5b. Dorsal rays VIII,13 or 14; pectoral rays ii,13 rarely ii,12 or ii,14; pores in lateral line 46 or 47; tips of outer caudal fin rays usually black in adults.

7a. Dorsal rays VIII,13; gill rakers on first arch 20 or 21 (Cuba). **P. cubensis,** new species

7b. Dorsal rays VIII,14; gill rakers on first arch 21 to 23 (Gulf of Mexico). **P. mexicanus mexicanus,** new species and subspecies

7c. Dorsal rays VIII,14; gill rakers on first arch 18 to 21, rarely 21 (off Venezuela and Guianas). **P. mexicanus atlanticus,** new subspecies

4b. Pores in lateral line 48 to 70; gill rakers on first gill arch about 18 to 20 (unknown for *P. maculata*).

---

[1] *Pikea* Steindachner, Sitzber. Akad. Wiss. Wien, vol. 69, p. 2, 1874 (type species, *Pikea lunulata* (= *Grystes lunulatus* Guichenot 1863).

Labracopsis Döderlein *in* Steindachner and Döderlein, Anz. Akad. Wien, vol. 20, p. 49, 1883; Denkschr. Akad. Wien, vol. 47, p. 235, 1883 (type species, *Labracopsis japonicus* Döderlein).

[2] *Labracopsis japonicus* Döderlein *in* Steindachner and Döderlein, Anz. Akad. Wien, vol. 20, p. 49, 1883; Denkschr. Akad. Wien, vol. 47, p. 235, pl. 6, fig. 3, 1883 (Japan).

[3] *Pikea aurora* Jordan and Evermann, Bull. U. S. Bur. Fish. vol. 22, (1902), p. 178, 1903; Ibid., vol. 23 (1903) pt. 1, p. 220, pl. 14, 1905 (Hilo).

[4] *Liopropoma mowbrayi* Woods and Kanazawa, Fieldiana, Zool., vol. 31, No. 53, p. 633, fig. 134, 1951 (Bermuda).

[5] *Chorististium swalesi* Fowler and Bean, U. S. Nat. Mus. Bull. 100, vol. 10, p. 186, 1930 (Gulf of Tomini, Celebes).

8a. Pores in lateral line 48 to 55.

9a. Pectoral rays ii,13 or 14; dorsal rays VIII,12; pores in lateral line 48 to 52; zig-zag scales around caudal peduncle about 40 to 52; body with numerous black spots (Reunion Island and Mauritius) . . . . . **P. lunulata** (Guichenot) [6]

9b. Pectoral rays i,13; dorsal VIII,13; pores in lateral line 54 or 55 (Panana) . . . . . **P. longilepis** (Garman) [7]

8b. Pores in lateral line about 65 to 70; dorsal rays VIII,12; pectoral ii,13; sides of body spotted (Japan).

P. maculata Steindachner and Döderlein [8]

2b. Dorsal spines IX (genus *Liopropoma*)[9]

10a. Dorsal rays IX,12; pores in lateral line 45 (Cuba).

L. aberrans (Poey)[10]

10b. Dorsal rays IX,14; pores in lateral line 58 (my count of drawing is 62 or 63) (Pernambuco, Brazil). . . . . **L. roseus** (Günther)[11]

1b. Spiny dorsal and soft dorsal fins completely separated externally by a scaled area of 5 to 7 rows across back between fins; dorsal rays VI–I–I,11 or 12; the seventh dorsal spine usually embedded below scales; pores in lateral line 45 to 48; 2½ to 5 scales in a row from lateral line to last dorsal spine; zig-zag scales around caudal peduncle 30 to 32; gill rakers 5 to 7+1+ 11 to 14 on first arch; anal rays III,8 . . . . (genus **Chorististium** Gill)[12]

11a. Coloration plain pale, no stripes or dark pigment marks on sides or on fins; pectoral rays ii,14; predorsal scales 12 to occiput; dorsal rays VI–I–I,i,11 (Christmas Island and Bikini Atoll) . . . . . **C. pallidum** Fowler [13]

11b. Coloration of alternating dark and pale streaks or dark wavy lines on sides.

12a. Sides of body with brown pigment specks, a few arranged in irregular lines on midsides; an oblique short dark brown streak on pectoral base; predorsal scales 13 to occiput. . . . . **C. brocki** (Schultz)[14]

---

[6] *Grystes lunulatus* Guichenot, Notes sur l'Ile de la Reunion. Faunae Ichthyologique, p. c–4, 1863 (Reunion Island).

Pikea lunulata Steindachner, Sitzber. Akad. Wiss. Wien, vol. 69, p. 2, 1874; Denkschr. Akad. Wiss. Wien, vol. 47, pl. 6, fig. 2, 1883.

Glaucosoma semilunifera Steindachner, *in* Bliss, Trans. Roy. Soc. Mauritius, new ser. vol. 13, p. 47, 1883 (Mauritius).

[7] *Liopropoma longilepis* Garman, Mem. Mus. Comp. Zool., vol. 24, p. 45, 1899 (lat. 7°33′ N.; long. 78°34′20″ W.).

[8] *Pikea maculata* Döderlein and Steindachner, Denkschr. Akad. Wiss. Wien, vol. 47, p. 234, pl. 6, figs. 1, 1a, 1b, 1883 (Japan).

[9] *Liopropoma* Gill, Proc. Acad. Nat. Sci. Philadelphia, p. 52, 1861 (type species, *Perca aberrans* Poey).

Bathyanthias Günther, Rep. Voyage *Challenger*, Zool., vol. 1, No. 6, p. 6, 1880 (type species *Bathyanthias roseus* Günther).

[10] *Perca aberrans* Poey, Memorias, vol. 2, p. 125, pl. 12, fig. 2, 1860 (Cuba).

[11] *Bathyanthias roseus* Günther, Rep. Voyage *Challenger*, Zool., vol. 1, No. 6, p. 6, pl. 1, fig. B, 1880 (Pernambuco, Brazil).

[12] *Chorististium* Gill, Proc. Acad. Nat. Sci. Philadelphia, vol. 14, p. 15, 1862 (type species, *Perca rubre* Poey; misspelled *Chorististum* in heading).

Ypsigramma Schultz, U. S. Nat. Mus. Bull. 202, vol. 1, p. 372, 1953 (type species, *Ypsigramma lineata* Schultz).

[13] *Chorististium pallidum* Fowler, Monogr. Acad. Nat. Sci. Philadelphia, vol. 2, p. 199, fig. 20, 1938 (Christmas Island).

[14] *Ypsigramma brocki* Schultz, U. S. Nat. Mus. Bull. 202, vol. 1, p. 379, fig. 60, 1953 (Marshall and Gilbert Islands).

12b. Coloration not as above.

13a. Sides of body with 7 or 8 distinct, almost straight lengthwise dark brown streaks.

14a. Five brown streaks on each side of caudal peduncle; 3½ or 4 scales between lateral line and last doral spine; predorsal scales 12 or 13 to occiput. . . . . **C. lineata** (Schultz)[15]

14b. Four brown streaks on each side of caudal peduncle; 3 scales between lateral line and second dorsal origin; predorsal scales 10 to occiput. . . . . **C. susumi** Jordan and Seale[16]

13b. Four or 5 dark streaks on each side of body; 3 dark streaks on each side of caudal peduncle.

15a. Five dark streaks on each side of body; pectoral rays ii,12; tips of posterior lobes of median fins with black blotches (Cuba; Bahama Islands) . . . . . **C. rubrum** (Poey)[17]

15b. Four dark streaks on each side of body; pectoral rays ii,13 (Zanzibar) . . . . . **C. africanum** Smith[18]

---

[15] *Ypsigramma lineata* Schultz, U. S. Nat. Mus. Bull. 202, vol. 1, p. 355, fig. 59, 1953 (Marshall and Philippine Islands).

Chorististium susumi (not Jordan and Seale) Smith, J. L. B., Ann. Mag. Nat. Hist., ser. 12, vol. 7, p. 862, pl. 27, fig. c, 1954 (Matemo Island, off East African Coast).

[16] *Chorististium susumi* Jordan and Seale, Bull. U. S. Bur. Fish., vol. 25 (1905), p. 256, fig. 48, 1906 (Apia, Samoa).

[17] *Liopropoma rubre* Poey, Memorias, vol. 2, p. 418, 1861 (Cuba).

[18] *Chorististium africanum* Smith, J. L. B., Ann. Mag. Nat. Hist., ser. 12, vol. 7, p. 866, fig. 1, pl. 27, fig. B, 1954 (Pinda Pembra, Zanzibar and Tekomazi Island).

U. S. GOVERNMENT PRINTING OFFICE: 1958